

Application No. 10/750,608
Amendment Dated February 26, 2009
Reply to Office Action of December 23, 2008

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A medical monitoring system of a health care facility, the system comprising:

a plurality of patient monitoring devices, each of the plurality of patient monitoring devices configured to send an alert to the medical monitoring system through a hospital network when any of a plurality of patients being monitored may have a condition that requires attention, the medical monitoring system configured to generate a notification message when any one of the plurality of patient monitoring devices sends the alert; ~~the medical monitoring system further includes~~

a notification server that converts the alert to an appropriate format; ~~and~~

a notification transmitter, WLAN transceiver, and a cellular network transceiver, all configured to receive the alert from the notification server and ~~wirelessly simultaneously~~ transfer the notification message wirelessly to a portable electronic device of a pre-selected caregiver, wherein the portable electronic device includes:

an audio signal input device;

an audio signal output device;

a wireless transceiver; and

a processing circuit configured to receive the notification messages indicating that the patient being monitored may have a condition that requires attention and to facilitate transfer of voice data to the audio signal output and from the audio signal input by way of the wireless transceiver,

wherein the portable electronic device is adapted to communicate via a plurality of wireless protocols, corresponding to the plurality of patient monitoring devices.

2. (Original) The portable electronic device of claim 1, wherein both the notification messages and the voice data may be transferred by way of the wireless transceiver.

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3. (Original) The portable electronic device of claim 1, wherein the wireless transceiver uses a cellular data protocol.

4. (Original) The portable electronic device of claim 1, wherein the device is configured such that if a voice communication link is established with a recipient while a notification message is being displayed, data associated with the notification message may be forwarded to the recipient.

5. (Original) The portable electronic device of claim 4, wherein the device is configured such that if a voice communication link is established with a recipient while a notification message is received, data associated with the notification message is automatically forwarded to the recipient.

6. (Original) The portable electronic device of claim 1, wherein the transceiver is capable of transferring voice data to an access point connected to a health care facility network.

7. (Original) The portable electronic device of claim 1, wherein the transceiver is configured such that a user may connect directly with a second portable electronic device.

8. (Original) The portable electronic device of claim 1, comprising a second wireless transceiver configured to transfer data.

9. (Original) The portable electronic device of claim 8, wherein the wireless transceiver uses a cellular protocol.

10. (Original) The portable electronic device of claim 8, wherein the processing circuit is further configured to facilitate transfer of voice data to the audio signal output and from the audio signal input by way of the second wireless transceiver.

11. (Currently Amended) A system for establishing voice communication in a health care facility having a monitoring system that generates notification messages indicating that a patient being monitored may have a condition that requires attention and wirelessly transfers the notification messages to portable electronic devices, the system comprising:

a plurality of patient monitoring devices, each of the plurality of patient monitoring devices configured to send an alert to the medical monitoring system through a hospital network when any of a plurality of patients being monitored may have a condition that requires attention, the medical monitoring system configured to generate a notification message when one of the plurality of patient monitoring devices sends the alert; ~~the medical monitoring system further includes~~

a notification server that converts the alert to an appropriate format; and
a notification transmitter, WLAN transceiver, and a cellular network transceiver, all configured to receive the alert from the notification server and ~~wirelessly simultaneously~~ transfer the notification message wirelessly to a portable electronic device of a preselected caregiver, comprising:

an audio signal input device;
an audio signal output device;
a wireless transceiver; and
a first processing circuit configured to receive the notification message indicating that the patient being monitored may have a condition that requires attention and to facilitate transfer of voice data to the audio signal output and from the audio signal input by way of the wireless transceiver; and

a second processing circuit configured to receive voice data sent from the portable electronic device and facilitate transfer of the voice data to a recipient, wherein the portable electronic device is adapted to communicate via a plurality of wireless protocols, corresponding to the plurality of patient monitoring devices.

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12. (Original) The system of claim 11, wherein the second processing circuit is configured to facilitate transfer of the voice data to a recipient using the telephone line.
13. (Original) The system of claim 12, wherein the processing circuit is configured to use a private branch exchange to facilitate transfer of the voice data to a recipient using the telephone line.
14. (Original) The system of claim 11, wherein the second processing circuit is coupled to the portable electronic device using network of the health care facility.
15. (Original) The system of claim 11, wherein the second processing circuit is configured to receive a user input signal input by the audio signal input device and initiate a call to a particular recipient based on the audible user input signal.
16. (Original) The system of claim 11, wherein the processing circuit is configured to facilitate transfer of the voice data over a cellular network.
17. (Original) The system of claim 11, further comprising:
 - a second portable electronic device, comprising:
 - a second audio signal input device;
 - a second signal output device;
 - a second wireless transceiver; and
 - a third processing circuit configured to receive the notification messages indicating that the patient being monitored may have a condition that requires attention and to facilitate transfer of voice data to the second audio signal output and from the second audio signal input by way of the wireless transceiver;
 - wherein the portable electronic device is configured to transfer voice data from the first electronic device directly to the second electronic device.

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18. (Original) The system of claim 11, wherein one of the first processing circuit and the second processing circuit is configured to initiate a call to a particular recipient based on a notification message received by the portable electronic device.
19. (Original) The system of claim 11, wherein the processing circuit is configured to allow voice data to be transferred while data associated with a notification message is displayed on the portable electronic device.
20. (Original) The system of claim 11, wherein the wireless transceiver is configured to use a cellular protocol.
21. (Original) The system of claim 11, wherein a single user input receive by one of a user input device of the portable electronic device and a device used by the recipient of the voice data may be used to forward, to the recipient of the voice data, physiologic data that has been received by the portable electronic device.
22. (Original) The system of claim 21, wherein the single user input may be used to forward data that is displayed on a display screen of the portable electronic device and data that is related to the data that is displayed o a display screen of the portable electronic device.
23. (Previously Presented) The system of claim 11, wherein the system is configured such that the portable electronic device may be used to control a wireless phone coupled to the portable electronic device and answer incoming calls of the wireless phone.
24. (Original) The system of claim 11, wherein a notification message received by the first processing circuit includes the physiological data associated with the patient who may have a condition that requires attention.

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25. (Currently Amended) A method to be implemented by electronic devices of a medical monitoring system of a health care facility where a patient's physiological characteristics are being monitored for conditions that may require attention by a clinician, the method comprising:

receiving in the medical monitoring system data from a monitoring device configured to monitor a patient, wherein the data is received through a hospital network;

determining whether the patient has a condition that may require attention based on the data received from the monitoring device;

generating a notification message if the patient has a condition that may require attention;

converting the alert to an-a plurality of appropriate formats with a notification server;
sending the notification message simultaneously with a notification transmitter, a WLAN transceiver and a cellular network transceiver ~~in the medical monitoring system~~ wirelessly to a portable electronic device; and

wirelessly transferring voice data received from the portable electronic device to a recipient, wherein the portable electronic device is configured to wirelessly transfer the voice data via a plurality of protocols.

26. (Original) The method of claim 25, wherein the notification message includes physiologic data.

27. (Original) The method of claim 26 wherein the physiologic data is ECG waveform data.

28. (Original) The method of claim 25, wherein receiving data from a monitoring device comprises receiving data from a central station that has received the data from the monitoring device.

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29. (Original) The method of claim 25, wherein receiving data from a monitoring device comprises receiving data from a plurality of monitoring devices adapted to monitor a same patient.
30. (Original) The method of claim 25, wherein transferring voice data received from the portable electronic device to a recipient comprises transferring the voice data over a hospital network.
31. (Original) The method of claim 25, wherein transferring voice data received from the portable electronic device to a recipient comprises transferring data over a cellular network.
32. (Original) The method of claim 31, wherein the notification message includes physiologic data.
33. (Original) The method of claim 25, wherein transferring voice data and sending a notification message comprises transferring the voice data and sending the notification message using a same transceiver.
34. (Original) The method of claim 25, further comprising forwarding physiologic data to a second portable electronic device based on a user input received from the portable electronic device.
35. (Original) The method of claim 34, wherein the user input is establishing a voice communication session while data associated with a notification message is displayed on the portable electronic device.
36. (Original) The method of claim 34, wherein the physiologic data is data associated with a notification message being displayed on the portable electronic device.

37. (Original) The method of claim 25, wherein transferring voice data received from the portable electronic device to a recipient comprises identifying the recipient based on a user audio input received by the portable electronic device.

38. (Original) The method of claim 25, further comprising transferring voice data using a wired connection to the portable electronic device.

39. (Original) The method of claim 25, wherein data based an analysis of physiological data received from the patient is sent with the notification message.

40. (Currently Amended) A method to be implemented by electronic devices of a medical monitoring system of a health care facility where a patient's physiological characteristics are being monitored for conditions that may require attention by a clinician, the method comprising:

receiving in the medical monitoring system data from a monitoring device configured to monitor a patient, wherein the data is received through a hospital network;

determining whether the patient has a condition that may require attention based on the data received from the monitoring device;

generating a notification message if the patient has a condition that may require attention;

converting the alert to an a plurality of appropriate formats with a notification server; wirelessly sending a notification message simultaneously with a notification transmitter, a WLAN transceiver and a cellular network transceiver ~~in the medical monitoring system~~ to a first portable electronic device if the patient has a condition that may require attention, the first notification message including physiologic data;

wirelessly sending a second notification message with the notification transmitter ~~in the medical monitoring system~~ to a second portable electronic device if the patient has a condition that may require attention, the second notification message including physiologic data;

forwarding data to the second portable electronic device based on a user input received from a user input device of the first portable electronic device, the data that is forwarded being data associated with a notification message being displayed on the first portable electronic device; and

transferring voice data received from one of the first portable electronic device and the second portable electronic device to the other of the first portable electronic device and the second portable electronic device;

wherein transferring voice data comprises transferring the voice data using one of:

a network of the health care facility;

a direct wireless connection between the first portable electronic device and the second portable electronic device; and

a cellular network.

41. (Original) The method of claim 40, wherein the notification message includes ECG waveform data.

42. (Original) The method of claim 40, wherein wirelessly sending a notification message to a second portable electronic device, forwarding data to the second portable electronic device, and transferring voice data comprises sending the notification message, forwarding the data, and transferring the voice data using a single transceiver of the second portable electronic device.